WHAT IS CLAIMED IS:

1. A fabrication element comprising a body structure having at least one venting element disposed therein or at least partially therethrough.

2. The fabrication element of claim **1**, wherein the at least one venting element is disposed completely through the body structure.

3. The fabrication element of claim **1**, wherein prior to body structure fabrication, the body structure comprises at least a first and a second substrate.

4. The fabrication element of claim 3, wherein the first and second substrates are substantially planar.

5. The fabrication element of claim 3, wherein at least one of the first and second substrates comprises the at least one venting element or a portion thereof disposed thereon or therethrough.

6. The fabrication element of claim 5, wherein one or more of the first and second substrates further comprise at least one channel network, at least one port, both, or portions thereof disposed thereon or therethrough.

7. The fabrication element of claim 6, wherein the at least one venting element or the portion thereof is separate from any other components disposed thereon or therethrough.

8. The fabrication element of claim 6, wherein the at least one venting element or the portion thereof adjoins one or more ports or one or more portions thereof disposed thereon or therethrough.

9. The fabrication element of claim **1**, wherein the body structure is divided to form a plurality of body structures.

10. The fabrication element of claim 9, wherein each of the plurality of body structures comprises a microfluidic device.

11. The fabrication element of claim 9, wherein each of the plurality of body structures is formed by cutting, scoring, breaking, or etching the body structure.

12. The fabrication element of claim 1, wherein the at least one venting element thermally insulates at least a first portion of the body structure from at least a second portion of the body structure, thereby reducing thermal coupling between the first and second portions.

13. The fabrication element of claim 12, wherein the at least one venting element is disposed in the body structure and produces at least one stagnant vapor region that reduces convective transport between venting element surfaces.

14. The fabrication element of claim 12, wherein the at least one venting element is disposed at least partially through the body structure and at least one surface of the body structure further comprises at least one substrate disposed over at least a segment of the at least one venting element to produce at least one stagnant vapor region that reduces convective transport between venting element surfaces.

15. The fabrication element of claim 12, wherein at least one of the first and second portions further comprises at least one cavity disposed therein.

16. The fabrication element of claim 15, wherein the at least one cavity comprises a plurality of cavities, wherein at least two adjacent cavities comprise one or more venting elements disposed therebetween.

17. The fabrication element of claim 15, further comprising one or more electrodes disposed in or proximal to the at least one cavity.

18. The fabrication element of claim 17, further comprising at least one electrical power supply operably connected to the one or more electrodes to deliver current to fluidic materials disposed in the at least one cavity, which current resistively heats the fluidic materials.

19. The fabrication element of claim 18, wherein the fluidic materials comprise nucleic acids and resistive heat denatures the nucleic acids.

20. The fabrication element of claim 15, wherein the at least one venting element is separate from the at least one cavity or any other component disposed within or through at least a portion of the body structure.

21. The fabrication element of claim 15, wherein the at least one venting element is in fluid communication with at least one port disposed in the body structure, which port is separate from the at least one cavity.

22. The fabrication element of claim 15, wherein the body structure further comprises one or more ports, one or more capillary elements, or both, in fluid communication with the at least one cavity.

23. The fabrication element of claim 15, wherein the body structure comprises at least one microfluidic device.

24. The fabrication element of claim 15, wherein the at least one cavity comprises at least one microchannel network.

25. The fabrication element of claim 24, wherein the at least one venting element comprises at least one venting channel network, a plurality of venting cavities, or both, disposed in the body structure.

26. The fabrication element of claim 25, wherein at least one of the plurality of venting cavities comprises a regularly or an irregularly shaped cavity.

27. The fabrication element of claim 25, wherein each of the plurality of venting cavities comprises three dimensions, wherein two of the three dimensions together form a shape comprising a triangle, a square, a rectangle, a trapezoid, a regular n-sided polygon, an irregular n-sided polygon, a circle, or an oval.

28. The fabrication element of claim 25, wherein a volume of at least one of the plurality of venting cavities is at least about 1 μm^3.

29. The fabrication element of claim 25, wherein a depth of at least one of the plurality of venting cavities is at least about 0.1 μm.

30. The fabrication element of claim 25, wherein each of the plurality of venting cavities is spaced at least about 10 μm apart from one another.

31. The fabrication element of claim 25, wherein each of the plurality of venting cavities is spaced at least about 5 μm from an edge of a nearest microchannel or a nearest port.

32. The fabrication element of claim 25, wherein each of the plurality of venting cavities is regularly or irregularly spaced from one another.

33. The fabrication element of claim 25, wherein at least one venting channel of the at least one venting channel network is disposed along at least a portion of and substantially parallel to one or more sides of one or more microchannels in the at least one microchannel network.

34. The fabrication element of claim 25, wherein the at least one venting channel network comprises at least a first venting channel network, at least one venting channel of which is disposed proximal to a first side of one or more microchannels in the at least one microchannel network.

35. The fabrication element of claim 34, further comprising at least a second venting channel network, at least one venting channel of which is disposed proximal to a second side of one or more microchannels in the at least one microchannel network.

36. The fabrication element of claim 35, wherein the at least one venting channel of the first and second venting channel networks are disposed substantially parallel to the one or more microchannels in the at least one microchannel network.

37. The fabrication element of claim 35, wherein the at least one venting channel of the first and second venting channel networks terminate at least about 0.05 mm from an edge of a port when the one or more microchannels in the microchannel network fluidly communicate with the port.

38. The fabrication element of claim 35, wherein the at least one venting channel of the first and second venting channel networks each comprises a width of at least about 5 μm.

39. The fabrication element of claim 35, wherein two or more venting channels in the first or second venting channel networks merge in regions where cross-sectional midpoints of the two or more venting channels are separated by at most about 50 μm.

40. The fabrication element of claim 35, wherein cross-sectional midpoints of the at least one venting channel of the first and second venting channel networks are each disposed at least about 60 μm from a cross-sectional midpoint of the one or more microchannels in the at least one microchannel network.

41. The fabrication element of claim 40, wherein the one or more microchannels comprise a width of at least about 60 μm.

42. The fabrication element of claim 35, wherein one or more edges of the body structure comprise at least a third venting channel network comprising one or more venting channels.

43. The fabrication element of claim 42, wherein the one or more venting channels comprise widths of at least about 0.1 mm.

44. The fabrication element of claim 42, wherein the one or more venting channels are disposed at least about 3 mm from the one or more edges of the body structure.

45. The fabrication element of claim 42, wherein one or more venting channels of the first and second venting channel networks fluidly communicate with the third venting channel network.

46. A method of fabricating a body structure, the method comprising:

forming at least a first and a second substrate, wherein at least one of the first and second substrates comprises at least one venting element, or a portion thereof, disposed thereon or therethrough; and,

bonding the first and second substrates together to form the body structure.

47. The method of claim 46, comprising providing the first and second substrates to be substantially planar and the bonding step to comprise heat laminating, adhering, welding, or clamping the first and the second substrates together to form the body structure.

48. The method of claim 46, further comprising dividing the body structure to form a plurality of body structures.

49. The method of claim 48, wherein each of the plurality of body structures comprises a microfluidic device.

50. The method of claim 48, comprising dividing the body structure by cutting, scoring, breaking, or etching the body structure.

51. The method of claim 46, wherein the at least one venting element thermally insulates at least a first portion of the body structure from at least a second portion of the body structure, thereby reducing thermal coupling between the first and second portions.

52. The method of claim 51, wherein the at least one venting element is disposed in the body structure and produces at least one stagnant vapor region that reduces convective transport between venting element surfaces.

53. The method of claim 51, wherein the body structure comprises the at least one venting element disposed at least partially therethrough and the method further comprises bonding at least one additional substrate over at least a segment of the at least one venting element to produce at least one stagnant vapor region that reduces convective transport between venting element surfaces.

54. The method of claim 51, wherein at least one of the first and second portions further comprises at least one cavity disposed therein.

55. The method of claim 54, wherein the at least one cavity comprises a plurality of cavities, wherein at least two adjacent cavities comprise one or more venting elements disposed therebetween.

56. The method of claim 46, wherein the at least one of the first and second substrates further comprises at least one cavity, or a portion thereof, disposed thereon.

57. The method of claim 56, further comprising fabricating one or more ports through at least one of the first or second substrates such that at least one of the one or more ports fluidly communicates with the at least one cavity.

58. The method of claim 56, further comprising fabricating one or more ports through at least one of the first or second substrates such that at least one of the one or more ports fluidly communicates with the at least one venting element.

59. The method of claim 56, wherein the body structure comprises at least one microfluidic device.

60. The method of claim 56, comprising fabricating the at least one venting element to comprise at least one venting channel network, a plurality of venting cavities, or both.

61. The method of claim 60, comprising fabricating each of the plurality of venting cavities to comprise regularly or irregularly shaped cavities, each cavity comprising three dimensions, wherein two of the three dimensions together form a shape comprising a triangle, a square, a rectangle, a trapezoid, a regular n-sided polygon, an irregular n-sided polygon, a circle, or an oval.

62. The method of claim 60, comprising fabricating each of the plurality of venting cavities at least about 5 μm from an edge of a nearest microchannel or a nearest port.

63. The method of claim 60, comprising fabricating each of the plurality of venting cavities at regular or irregular intervals from one another.

64. The method of claim 63, wherein the intervals comprise at least about 10 μm.

65. The method of claim 60, comprising fabricating the at least one cavity to comprise at least one microchannel network.

66. The method of claim 65, comprising fabricating the at least one venting channel network to comprise at least a first venting channel network, at least one venting channel of which is disposed proximal to a first side of one or more microchannels in the at least one microchannel network.

67. The method of claim 66, further comprising fabricating at least a second venting channel network, at least one venting channel of which is disposed proximal to a second side of the one or more microchannels in the at least one microchannel network.

68. The method of claim 67, comprising fabricating the at least one venting channel of the first and second venting channel networks to be disposed substantially parallel to the one or more microchannels.

69. The method of claim 67, comprising fabricating the at least one venting channel of the first and second venting channel networks to terminate at least about 0.05 mm from an edge of a port when the one or more microchannels fluidly communicate with the port.

70. The method of claim 67, comprising fabricating the at least one venting channel of the first and second venting channel networks to each comprise a width of at least about 5 μm.

71. The method of claim 67, comprising fabricating the at least one venting channel of the first and second venting channel networks to each comprise cross-sectional midpoints disposed at least about 60 μm from a cross-sectional midpoint of the one or more microchannels.

72. The method of claim 71, comprising fabricating the one or more microchannels to comprise a width of at least about 60 μm.

73. The method of claim 67, comprising merging two or more venting channels in the first or second venting channel networks in regions where cross-sectional midpoints of two or more venting channels are separated by less than about 50 μm.

74. The method of claim 67, comprising fabricating at least a third venting channel network comprising one or more venting channels proximal to one or more edges of the body structure.

75. The method of claim 74, comprising fabricating the one or more venting channels to comprise widths of at least about 0.1 mm.

76. The method of claim 74, comprising fabricating the one or more venting channels at least about 3 mm from the one or more edges of the body structure.

77. The method of claim 74, comprising fabricating one or more venting channels of the first and second venting channel networks to be in fluid communication with the third venting channel network.